

REMARKS

Claims 10 to 17 and 19 to 32 as set forth in Appendix II of this paper are now pending in this case. Claims 11, 20 and 22 have been amended as indicated in the listing of the claims for clarification and to correct obvious typographical errors. Additionally, applicants have amended pages 6, 7, 15, 19, 23, 25 and 26 of the application to remove the translator's marks "[sic]" and to correct the obvious errors so marked. No new matter has been added.

The Examiner rejected Claims 11 to 17 and 19 to 22 under 35 U.S.C. §112, ¶2, as being indefinite. In particular, the Examiner argued:<sup>2)</sup> "*It is unclear what is the meaning of 'alkylpolyglycoside' in claims? What is the meaning of degree of polymerization in Claims 15 and 16 where the degree of polymerization can be 1.*"

The test of definiteness is whether a person of ordinary skill in the pertinent art would understand the bounds of the claim when reading it in the light of the supporting specification.<sup>3)</sup> Claims need only reasonably apprise *those skilled in the art* as to their scope and be as precise as the subject matter permits.<sup>4)</sup> As a general matter, it is well-established that the determination whether a claim is invalid as indefinite depends on whether those skilled in the art would understand the scope of the claim when the claim is read in light of the specification.<sup>5)</sup> An application need not teach, and preferably omits, that which is well known in the art,<sup>6)</sup> and the purpose of the claim is not to explain the technology or how it works, but to state the legal boundaries of the patent grant, i.e. a claim is not "indefinite" simply because it is hard to understand without benefit of the specification,<sup>7)</sup> or without the benefit of the knowledge of a person having ordinary skill in the pertinent art. Moreover, as explained by the Board in *Ex parte Wu*:<sup>8)</sup>

*In rejecting a claim under the second paragraph of 35 U.S.C. 112, it is incumbent on the examiner to establish that one of ordinary skill in the pertinent art, when reading the claims in light of the supporting specification, would not have been able to ascertain with reasonable degree of precision and particularity the particular area set out and circumscribed by the claims.*

2) Office action page 18, lines 4 to 6.

3) Cf. *Morton Int. Inc. v. Cardinal Chem. Co.*, 5 F.3d 1464, 28 USPQ2d 1190 (Fed. Cir. 1993); *Orthokinetics Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1 USPQ2d 1081 (Fed. Cir. 1986).

4) *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 231 USPQ 634 (Fed. Cir. 1985), cert. denied, 480 U.S. 947 (1987).

5) *Atmel Corp. v. Information Storage Devices, Inc.*, 198 F.3d 1374, 53 USPQ2d 1225 (Fed. Cir. 1999); see also *North Am. Vaccine, Inc. v. American Cyanamid Co.*, 7 F.3d 1571, 1579, 28 USPQ2d 1333, 1339 (Fed. Cir. 1993); *Miles Lab., Inc. v. Shandon, Inc.*, 997 F.2d 870, 875, 27 USPQ2d 1123, 1126 (Fed. Cir. 1993).

6) *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 231 USPQ 81 (Fed. Cir. 1986); *Lindemann Maschinenfabrik GMBH v. American Hoist and Derrick Co.*, 730 F.2d 1452, 1463, 221 USPQ 481, 489 (Fed. Cir. 1984).

7) *S3 Inc. v. nVIDIA Corp.*, 259 F.3d 1364, 59 USPQ2d 1745 (Fed. Cir. 2001); cf. also *Autogiro Co. of America v. United States*, 384 F.2d 391, 397, 155 USPQ 697, 701 (Ct. Cl. 1967) (a claim cannot be interpreted without going beyond the claim itself).

8) 10 USPQ2d 2031 at 2033 (BPAI 1989).

As previously corroborated by applicants,<sup>9)</sup> the meaning of the expression “*alkylpolyglycoside*,” as well as the meaning of a degree of polymerization of 1 of such polyglycosides, is well established in the art. In fact, *Malik et al.* (H 224) which is applied by the Examiner under Section 103(a) corroborates that the respective had a well established meaning in the pertinent art as early as 1985.<sup>10)</sup>

The Examiner’s repeated criticism is, in light of applicants’ previous explanations and arguments, as well as the foregoing remarks, clearly not suited to establish that one of ordinary skill would not have been able to ascertain the area set out by the claims. As such, the Examiner has not met the burden to establish that applicants’ claims are indefinite under Section 112, ¶2. Also, the Examiner’s rejection is clearly in error considering the foregoing standards developed by the Courts and the knowledge of one of ordinary skill in the pertinent technology. It is therefore respectfully urged that the rejection be withdrawn. Favorable action is solicited.

The Examiner rejected Claims 10 to 17 and 19 to 23 under 35 U.S.C. §112, ¶1, as failing comply with the written description requirement.

To satisfy the written description requirement, a patent specification must describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention.<sup>11)</sup> An applicant shows possession of the claimed invention by describing the claimed invention with all of its limitations using such descriptive means as words, structures, figures, diagrams, and formulas that fully set forth the claimed invention.<sup>12)</sup> Possession may be shown in a variety of ways including description of an actual reduction to practice, or by showing that the invention was “ready for patenting” such as by the disclosure of drawings or structural chemical formulas that show that the invention was complete, or by describing distinguishing identifying characteristics sufficient to show that the applicant was in possession of the claimed invention.<sup>13)</sup> Possession may be shown in many ways. An adequate written description of the invention may be shown by any description of sufficient, relevant, identifying characteristics so long as a person skilled in the art would recognize that the inventor had possession of the claimed invention.<sup>14)</sup> As explained by the Federal Circuit, “(1) examples are not necessary to support the adequacy of a written description; (2) the written description standard may be met ... even where actual reduction to practice of an invention is absent; and (3) there is no per se rule that an adequate written descrip-

9) Cf. applicants’ paper dated December 06, 2006, which is herewith incorporated by reference.

10) Cf. col. 2, indicated lines 53 to 63, of H224.

11) See, e.g., *Moba, B.V. v. Diamond Automation, Inc.*, 325 F.3d 1306, 1319, 66 USPQ2d 1429, 1438 (Fed. Cir. 2003); *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563, 19 USPQ2d 1111, 1116 (Fed. Cir. 1991).

12) *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (Fed. Cir. 1997).

13) See, e.g., *Pfaff v. Wells Elecs., Inc.*, 525 U.S. 55, 68, 119 S.Ct. 304, 312, 48 USPQ2d 1641, 1647 (1998); *Regents of the University of California v. Eli Lilly*, 119 F.3d 1559, 1568, 43 USPQ2d 1398, 1406 (Fed. Cir. 1997), cert. denied, 523 U.S. 1089 (1998); *Amgen, Inc. v. Chugai Pharmaceutical*, 927 F.2d 1200, 1206, 18 USPQ2d 1016, 1021 (Fed. Cir. 1991).

14) See, e.g., *Purdue Pharma L.P. v. Faulding Inc.*, 230 F.3d 1320, 1323, 56 USPQ2d 1481, 1483 (Fed. Cir. 2000); see also *Pfaff v. Wells Electronics, Inc.*, 55 U.S. 55, 66, 119 S.Ct. 304, 311, 48 USPQ2d 1641, 1646 (1998).

*tion of an invention that involves a biological macromolecule must contain a recitation of known structure.”<sup>15)</sup> Also, what is conventional or well known to one of ordinary skill in the art need not be disclosed in detail.<sup>16)</sup> If a skilled artisan would have understood the inventor to be in possession of the claimed invention at the time of filing, even if every nuance of the claims is not explicitly described in the specification, then the adequate description requirement is met.<sup>17)</sup>*

Also, a description as filed is presumed to be adequate, unless or until sufficient evidence or reasoning to the contrary has been presented by the examiner to rebut the presumption.<sup>18)</sup> The examiner, therefore, must have a reasonable basis to challenge the adequacy of the written description. The examiner has the initial burden of presenting by a preponderance of evidence why a person skilled in the art would not recognize in an applicant’s disclosure a description of the invention defined by the claims.<sup>19)</sup>

The Examiner alleged:<sup>20)</sup> “*Applicant had no possession of the claimed subject matter at the time the application was filed*” because:<sup>21)</sup>

- a) “*The specification discloses one sulfonylurea herbicide, which is metsulfuron methyl in Example 16 on page 32. Claimed subject matter is drawn to all sulfonylurea herbicides as in claims 10, 11 and 22.*”
- b) “*Structure of the compound is drawn to show that how different are the structures (see more in scope of enablement rejection) and so would their properties.*”
- c) “*The sulfonylurea herbicide (claim 10), encompasses thousands of compounds because it includes any sulfonylurea. Further, for example, see the Formula in claim 11 where Z is nitrogen or carbon also includes thousands of compounds. Similarly see the Formula in claim 22, where J can be different heterocyclic and non-heterocyclic groups.*”

Regarding (a) it is respectfully noted that the Examiner appears to confuse what is disclosed by applicants specification and what is illustrated. Applicants’ disclose numerous specific sulfonylurea herbicides, e.g. on pages 6 to 12 of the application. It also appears to have been overlooked by the Examiner that “SU-1”, ie. “compound No. 47 from Table 1,”<sup>22)</sup> is a further sulfonylurea herbicide employed in the examples described in the application. Hence, the Examiner’s allegation in (a) is

15) *Falkner v. Inglis*, 448 F.3d 1357, 1366, 79 USPQ2d 1001, 1007 (Fed. Cir. 2006). See also *Capon v. Eshhar*, 418 F.3d 1349, 1358, 76 USPQ2d 1078, 1084 (Fed. Cir. 2005).

16) See *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1384, 231 USPQ 81, 94 (Fed. Cir. 1986). See also *Capon v. Eshhar*, 418 F.3d 1349, 1357, 76 USPQ2d 1078, 1085 (Fed. Cir. 2005).

17) See, e.g., *Vas-Cath*, 935 F.2d 1555, 1563, 19 USPQ2d 1111, 1116 (Fed. Cir. 1991); *Martin v. Johnson*, 454 F.2d 746, 751, 172 USPQ 391, 395 (CCPA 1972).

18) See, e.g., *In re Marzocchi*, 439 F.2d 220, 224, 169 USPQ 367, 370 (CCPA 1971).

19) *In re Wertheim*, 541 F.2d 257, 263, 191 USPQ 90, 97 (CCPA 1976).

20) Office action page 5, lines 10 and 11. See also Office action page 5, lines 21 and 22, and page 7 lines 1 and 2.

21) Office action page 5, lines 11 to 20.

22) Cf. e.g. page 23, indicated line 9, of the application.

deemed to be based on error. The Examiner's position in (b) is also not deemed to be well taken. The sulfonylurea herbicides share, for example, the herbicidal properties. Additionally, sulfonylurea herbicides are structurally closely related, inter alia, through the common sulfonylurea moiety  $-\text{SO}_2-\text{NH}-\text{CO}-\text{N}(\text{R})-$ . It is therefore evident to a person having ordinary skill in the pertinent art that stability concerns which apply to one of the sulfonylurea herbicides will correspondingly apply to other representatives of the class of sulfonylurea herbicides. The disclosure of *DuPont* which is applied by the Examiner under Section 103(a) in fact corroborates the foregoing. The publication mentions, in the discussion of the "*Hydrolysis Half-Life*" concerning the three sulfonylurea herbicides Escort®, Oust® and Telar®: "*Temperature is a major factor affecting the rate of chemical hydrolysis of the three compounds. The half-life decreases rapidly as the temperature increases from 45°F to 95°F.*" As concerns (c) it should be noted that applicants' claims, in no instance, refer to any and all sulfonylurea compounds. Applicants' claims specifically refer to sulfonylurea herbicides, e.g. a class of herbicides which share particular biological properties and which are closely structurally related, inter alia, through the common sulfonylurea moiety  $-\text{SO}_2-\text{NH}-\text{CO}-\text{N}(\text{R})-$ . As pointed out by *DuPont* with regard to Escort®, Oust® and Telar® in the discussion of "*Soil Dissipation and Biodegradability*," the most common and significant breakdown processes include chemical hydrolysis. Accordingly, sulfonylurea herbicides can reasonably be regarded as equivalents when stability properties are concerned.

All of the arguments (a)-(c) brought forth by the Examiner in support for the position that applicants failed to meet the written description requirement are, in light of the foregoing, deemed to be in error. More pertinently, the respective remarks cannot reasonably be considered to amount to a preponderance of evidence why a person skilled in the art would not recognize in an applicant's disclosure a description of the invention defined by the claims. The Examiner's copy of sections of MPEP §2163 on pages 7 to 11 of the Office action is noted and appreciated. However, applicants are unable to determine how the reproduced parts could reasonably provide the preponderance of evidence which is necessary for the Examiner to establish that applicants failed to comply with the written description requirement of Section 112, ¶1. The respective reproduction is, in particular, not deemed to be suited to relieve the Examiner from the burden of presenting by a preponderance of evidence why a person skilled in the art would not recognize in an applicant's disclosure a description of the invention defined by the claims.<sup>19)</sup>

Additionally, the Examiner's rejection is deemed to be clearly in error in light of the foregoing standards developed by the Courts as well as the explanations given in MPEP §2163 as, for example, reproduced by the Examiner. It is therefore respectfully urged that the rejection be withdrawn. Favorable action is solicited.

The Examiner also rejected Claims 10 to 17 and 19 to 23 under 35 U.S.C. §112, ¶1, as failing to comply with the enablement requirement.

The standard for determining whether the specification meets the enablement requirement was cast in the Supreme Court decision of *Mineral Separation v. Hyde*, 242 U.S. 261, 270 (1916) which postured the question: is the experimentation needed to practice the invention undue or unreasonable? That standard is still the one to be applied.<sup>23)</sup> Accordingly, even though the statute does not use the term “undue experimentation,” it has been interpreted to require that the claimed invention be enabled so that any person skilled in the art can make and use the invention without undue experimentation.<sup>23)24)</sup> The fact that experimentation may be complex does not necessarily make it undue, if the art typically engages in such experimentation.<sup>23)25)</sup> The test of enablement is not whether any experimentation is necessary, but whether, if experimentation is necessary, it is undue.<sup>26)</sup>

Compliance with the enablement requirement of 35 U.S.C. 112 does not turn on whether an example is disclosed. An applicant need not have actually reduced the invention to practice prior to filing,<sup>27)</sup> and the specification need not contain an example if the invention is otherwise disclosed in such manner that one skilled in the art will be able to practice it without an undue amount of experimentation.<sup>28)</sup> As long as the specification discloses at least one method for making and using the claimed invention that bears a reasonable correlation to the entire scope of the claim, then the enablement requirement is satisfied.<sup>29)</sup>

Moreover, in order to make a rejection, the examiner has the initial burden to establish a reasonable basis to question the enablement provided for the claimed invention.<sup>30)</sup> Only if sufficient reason for such doubt exists, a rejection for failure to teach how to make and/or use will be proper on that basis.<sup>31)</sup> As stated by the court:<sup>32)</sup> “*it is incumbent upon the Patent Office, whenever a rejection on this basis is made, to explain why it doubts the truth or accuracy of any statement in a supporting disclosure and to back up assertions of its own with acceptable evidence or reasoning which is inconsistent with the contested statement. Otherwise, there would be no need for the applicant to go to the trouble and expense of supporting his presumptively accurate disclosure.*”

23) *In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988).

24) See also *United States v. Teletronics, Inc.*, 857 F.2d 778, 785, 8 USPQ2d 1217, 1223 (Fed. Cir. 1988).

25) *In re Certain Limited-Charge Cell Culture Microcarriers*, 221 USPQ 1165, 1174 (Int'l Trade Comm'n 1983), aff'd. sub nom., *Massachusetts Institute of Technology v. A.B. Fortia*, 774 F.2d 1104, 227 USPQ 428 (Fed. Cir. 1985).

26) *In re Angstadt*, 537 F.2d 498, 504, 190 USPQ 214, 219 (CCPA 1976).

27) *Gould v. Quigg*, 822 F.2d 1074, 1078, 3 USPQ2d 1302, 1304 (Fed. Cir. 1987).

28) *In re Borkowski*, 422 F.2d 904, 908, 164 USPQ 642, 645 (CCPA 1970).

29) *In re Fisher*, 427 F.2d 833, 839, 166 USPQ 18, 24 (CCPA 1970).

30) *In re Wright*, 999 F.2d 1557, 1562, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993).

31) *In re Marzocchi*, 439 F.2d 220, 224, 169 USPQ 367, 370 (CCPA 1971).

32) Ibid., 439 F.2d at 224, 169 USPQ at 370.

The Examiner alleged in this context:<sup>33)</sup> “*There is lack of predictability in the art*” arguing:<sup>34)</sup> “*Prediction to make any mixture or to predict any property for such a large number of compounds having different chemical structure and different properties is impossible as can be seen in the cited reference*” of *Böger et al.* The Examiner’s position that a prediction to make any mixture is impossible is not understood. *Böger et al.* address herbicide classes, and enumerate a broad variety of herbicidal sulfonylurea compounds, all of which have the common sulfonylurea moiety –SO<sub>2</sub>–NH–CO–N(R)–.<sup>35)</sup> It is not seen why a person of ordinary skill in the art would be unable to make a mixture comprising one of the mentioned herbicidal ingredients or, for that matter, comprising one of the sulfonylurea herbicides mentioned in the application. In terms of the properties of any such mixture as a herbicide it is not understood why a person of ordinary skill in the art would doubt that a mixture which contains a herbicidal compound exhibits herbicidal properties. The Examiner enumerated a number of sulfonylureas<sup>35)</sup> pointing out that the compounds belonged to different classes. However, all of the enumerated representatives are herbicides.

More pertinently, however, it has to be borne in mind that applicants’ invention pertains to a solid mixture comprising

- a) a sulfonylurea herbicide, and
- b) an alkylpolyglycoside,

and that applicants’ have found that the combination of the sulfonylurea herbicide and the alkylpolyglycoside in the solid mixture results in a pronounced stabilization of the herbicide,<sup>36)</sup> especially against losses upon storage at elevated temperatures.<sup>37)</sup> Even if *Böger et al.* could be considered to convey that the herbicidal action of sulfonylurea herbicides was unpredictable, there is clearly nothing which even remotely suggests or implies that the stabilizing effects which applicants have found for the combination of the sulfonylurea herbicide and the alkylpolyglycoside are “*unpredictable*” in light of applicants’ findings.

The Examiner further alleged:<sup>38)</sup> “*There is no guidance in the disclosure on how to use the invention successfully with all sulfonylurea herbicides, just metsulfuron-methyl (example 16).*” As already noted, the Examiner appears to have overlooked the investigations with the sulfonylurea herbicide SU-1. Additionally, the Examiner’s remark suggests, on the one hand, that the Examiner doubts the truth and accuracy of the statements made by applicants in the application. However, any such doubts on the part of the examiner has to be backed up with acceptable evidence or reasoning which is inconsistent with the contested statement.<sup>31)</sup> On the other hand, the Examiner’s remark suggests

33) Office action page 13, lines 10 and 11.

34) Office action page 14, lines 4 to 7.

35) Cf. also the herbicidal sulfonylurea compounds which are reproduced on pages 14 and 15 of the Office action.

36) Cf. e.g. page 2, indicated line 42, to page 3, indicated line 3, of the application.

37) Cf. Table 3 on pages 35 to 36 of the application.

38) Office action page 15, lines 8 to 10, emphasis original.

that the Examiner confuses "guidance" with "exemplification." As noted in the foregoing, Compliance with the enablement requirement of 35 U.S.C. 112 does not turn on whether an example is disclosed. An applicant need not have actually reduced the invention to practice prior to filing.<sup>27)</sup> The specification need not contain an example if the invention is otherwise disclosed in such manner that one skilled in the art will be able to practice it without an undue amount of experimentation.<sup>28)</sup>

It is respectfully urged that applicants' disclosure provides ample guidance beyond the illustrative examples, e.g. by giving a detailed description of herbicidal sulfonylurea compounds in general and by drawing particular attention to certain embodiments of such compounds,<sup>39)</sup> by giving a detailed description of the alkylpolyglycosides in general and by drawing particular attention to certain embodiments of such compounds,<sup>40)</sup> and by drawing the attention to weight percentages of the sulfonylurea herbicide and the alkylpolyglycosides in the solid mixture.<sup>41)</sup>

The Examiner concluded:<sup>42)</sup> "*Since there is no guidance and/or direction provided by the Applicants in the disclosure to support for a solid mixture containing all sulfonylurea herbicides as claimed, one skilled in the art at the time of invention would have to go through undue experimentation to make and/or use the presently claimed invention.*" The Examiner's conclusion is, however, as noted in the foregoing, drawn on the basis of an erroneous interpretation of the facts. Also, a person of ordinary skill in the pertinent art usually engages in mixing certain ingredients. Any such experimentation cannot reasonably be deemed to be complex let alone undue. The efforts involved in exposing any such mixtures to an elevated temperature for a certain period of time can also not reasonably be regarded as complex or undue experimentation. Last but not least, a person of ordinary skill in the art routinely applies herbicidal compositions to plants. As noted in the foregoing, the fact that experimentation may be complex does not necessarily make it undue, if the art typically engages in such experimentation,<sup>23)25)</sup> and the test of enablement is not whether any experimentation is necessary, but whether, if experimentation is necessary, it is undue.<sup>26)</sup>

Considering the foregoing standards developed by the Courts as well as well as the foregoing remarks and explanations, it does not appear that the Examiner has backed up her assertions with acceptable reasoning or evidence. As such, the Examiner's rejection is deemed to be in error. It is therefore respectfully requested that the rejection be withdrawn. Favorable action is solicited.

The Examiner rejected Claims 10 to 17 and 19 to 23 under 35 U.S.C. §103(a) as being unpatentable in light of the teaching of *Kocur et al.* (US 5,258,358) when taken in view of the disclosure of *Malik et al.* (H224) and a Product Information Sheet of *DuPont* regarding *Escort®*, *Oust®* and *Telar®*.

39) Cf. e.g. page 3, indicated line 13, to page 12, indicated line 47, of the application.

40) Cf. e.g. page 13, indicated line 1, to page 14, indicated line 13, of the application.

41) Cf. e.g. page 14, indicated lines 15 to 22, of the application.

42) Office action page 17, lines 7 to 11.

When applying 35 U.S.C. §103, it is *inter alia* necessary that the references be considered as a whole, that the references be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention, and that the references suggest the desirability and thus the obviousness of making the claimed combination.<sup>43)</sup> Applying these tenets of patent law, three basic criteria have to be met in order to establish a *prima facie* case of obviousness:

- (1) There must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings,
- (2) there must be a reasonable expectation of success, and
- (3) the prior art reference or the combined references must teach or suggest all of the claim limitations.

Additionally, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and cannot be based on the applicant's disclosure.<sup>44)</sup> Citing references which merely indicate that the elements and/or features which are recited in a claim are separately known in the art is not a sufficient basis for concluding that the combination of the elements which is defined by the claims would have been obvious to a person of ordinary skill in the art.<sup>45)</sup> To render the claimed combination of elements obvious it is also necessary that there be evidence of a motivating force which would impel a person skilled in the art to do what the applicant has done. The mere fact that the prior art could be combined and/or modified so as to arrive at the applicant's invention as claimed does not suffice to render such a modification *prima facie* obvious unless the prior art suggests the desirability of the modification.<sup>46)</sup> The fact that the respective combination and/or modification is within the skill in the art does not allow a conclusion that the prior art provides for a motivation to make the pertinent combination and/or modification.<sup>47)</sup> "*Would have been able to produce*" does not meet the standards applicable to a determination under Section 103(a).<sup>48)</sup> Moreover, as explained by the Court in *In re Antonie* the "*invention as a whole*" which is referenced in 35 U.S.C. 103(a) encompasses the properties which are inherent in the claimed subject matter:<sup>49)</sup>

*In determining whether the invention as a whole would have been obvious under 35 U.S.C. 103,*

43) *Hodosh v. Block Drug Co., Inc.*, 786 F.2d 1136, 1143 n.5, 229 USPQ 182, 187 n.5 (Fed. Cir. 1986).

44) *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991)

45) Cf. *Ex parte Hiyamizu*, 10 USPQ2d 1393 (BPAI 1988).

46) Cf. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991); *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984); see also, e.g., *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 227 USPQ 543 (Fed. Cir. 1985); *In re Grabiak*, 769 F.2d 729, 226 USPQ 870 (Fed. Cir. 1985); *In re Sernaker*, 702 F.2d 989, 217 USPQ 1 (Fed. Cir. 1983).

47) Cf. *In re Rouffet*, 149 F.3d 1350, 47 USPQ2d 1453 (Fed. Cir. 1998); *Al Site Corp. v. VSI International, Inc.*, 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999).

48) *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1 USPQ2d 1081 (Fed. Cir. 1986).

49) *In re Antonie*, 559 F.2d 618, 620, 195 USPQ 6, 8 (CCPA 1977); emphasis original.

*we must first delineate the invention as a whole. In delineating the invention as a whole, we look not only to the subject matter which is literally recited in the claim in question... but also to those properties of the subject matter which are inherent in the subject matter and are disclosed in the specification... Just as we look to a chemical and its properties when we examine the obviousness of a composition of matter claim, it is this invention as a whole, and not some part of it, which must be obvious under 35 U.S.C. 103.*

When the references are considered as a whole, without the benefit of impermissible hindsight vision afforded by applicants' invention, the references at least fail to teach or suggest applicants' invention as a whole, ie. a mixture which meets the following provisions:

- 1) the mixture is solid;
- 2) the mixture comprises (a) a sulfonylurea herbicide and (b) an alkylpolyglycoside; and
- 3) the stability of the sulfonylurea herbicide in the mixture under storage conditions at elevated temperatures is significantly improved.

The teaching of *Kocur et al.* pertains to a *liquid* formulation of glyphosate-ammonium comprising a surfactant from the series of alkylpolyglycosides and optionally other herbicidal substances such as, for example, atrazine, linuron, monolinuron, isoproturon, thidiazuron, simazine, diuron, metolachlor, oxfluorfen, bifenox, imazethapyr, imazethabenz, imazaquin, quizalofop-P-terfuryl (UBI-C 4874), and sulfonylureas such as DPX-L-5300, thiameturon-methyl, metsulfuron-methyl or nicosulfuron "where they can enhance the action of I [glyphosate-ammonium]."<sup>50)</sup> The formulation is in form of an aqueous solution or in form of an aqueous suspension concentrate if a water insoluble ingredient is present.<sup>51)</sup> According to the authors, the combination of glyphosate-ammonium with the respective surfactant(s) in the aqueous formulation avoids problems such as phase separation which occurs where the glyphosate-ammonium formulations are free of organic solvents, and precipitation problems which are encountered upon storage of liquid glyphosate-ammonium formulations at low temperatures.<sup>52)</sup>

*DuPont* disclose inter alia that three sulfonylurea herbicides including metsulfuron-methyl, ie. Escort®, are formulated as dispersible granules, that the granules have proven to be stable "when stored in their original containers at normal temperatures," that "[s]pray preparations of ... Escort[®] may degrade in acidic solutions if not used within 24 hours," that the most common and significant breakdown processes of the respective herbicides "are chemical hydrolysis and microbial degradation. The rate of hydrolysis is increased by ... low pH and the presence of moisture," and that

50) Col. 1, indicated lines 8 to 15, col. 1, indicated line 65, to col. 2, indicated line 9, and col. 2, indicated lines 50 to 59, of US 5,258,358.

51) Col. 2, indicated line 67, to col. 3, indicated line 6, of US 5,258,353.

52) Col. 1, indicated lines 27 to 33 and 44 to 58, col. 1, indicated lines 27 to 33, and col. 1, indicated lines 44 to 58, of US 5,258,358.

"[t]emperature is a major factor affecting the rate of chemical hydrolysis of the three compounds. The half-life decreases rapidly as the temperature increases from 45°F to 95°F."<sup>53)</sup>

The disclosure of *Malik et al.* pertains to liquid and to solid formulations which comprise an active ingredient and a glycoside dispersing agent such as an alkylpolyglycoside. Although the reference lists a broad variety of, inter alia, herbicides which are suited as active ingredient, neither sulfonylurea herbicides nor any structurally related compound are disclosed. The authors mention that the glycoside dispersing agent exhibits a low volatility and high resistance to being removed by rain from the surface of a growing plant. Illustrative examples of such formulations include wettable and flowable powders as well as emulsifyable concentrates, oily formulations and solutions.<sup>54)</sup>

Neither one of the references suggests or even implies that a dispersing agent may have any effect on the stability of a sulfonylurea herbicide. The teaching of *Kocur et al.* merely addresses phase separation problems which are encountered in *liquid* systems. The stability of a multi-phase *liquid* system against phase separation is, however, quite different from stabilizing a sulfonylurea herbicide against losses due to, e.g., the chemical hydrolysis which is mentioned in the *DuPont* bulletin. A person of ordinary skill in the art who had the three references before him at the time applicants' invention was made could, clearly, not reasonably conclude that the statements of *Kocur et al.* regarding a stabilization of a *liquid* system against phase separation had any relevance where the protection of a sulfonylurea herbicide against chemical hydrolysis is concerned.

However, as illustrated in applicants' Table 3 on page 35 of the application, formulations which comprise SU-1 or metsulfuron-methyl and either Lutensol® ON 30, Lutensol® ON 80, Armolem® 557, or Pluronic® PE 6400 suffer a loss in active ingredient in the range from 87 to 52% of the starting level when stored for 2 weeks at 54°C.<sup>55)</sup> The Examiner will appreciate that the respective results fully correspond to the observation of *DuPont* that the half-life of the sulfonylurea herbicides decreases rapidly as the temperature increases from 45°F to 95°F. While 52% of the active ingredient metsulfuron-methyl were lost under the storage conditions investigated by applicants when the herbicide was formulate in solid form with Lutensol® ON 30, a corresponding formulation with the alkylpolyglycoside Lutensol® GD 70 or AG® 6202 only exhibited losses in amount of 30% and 38%, respectively, under the same storage conditions.<sup>56)</sup> The impact of the alkylpolyglycoside on the stability of the sulfonylurea herbicide SU-1 is even more impressive. Here, the comparative mixtures exhibited losses in active ingredient in amounts from 61 to 87%. In contrast thereto, the losses

53) Subsections "Stability," "Soil Dissipation and Biodegradability," and "Hydrolysis Half-Life" of *DuPont*.

54) Col. 1, indicated lines 6 to 9 and 54 to 56, col. 2, indicated lines 5 to 14, col. 4, indicated lines 16 to 68, and col. 6, indicated lines 10 to 47, of *H224*.

55) Cf. Example Nos. C1, C2, C3 and C4 in applicants' Table 3.

56) Cf. Example Nos. C4, 15 and 16 in applicants' Table 3.

in active ingredient of the compositions in accordance with applicants' invention was at most 38% and was at best reduced to 1%.<sup>57)</sup>

For at least the foregoing reasons the teaching of *Kocur et al.* when taken in view of the disclosure of *Malik et al.* the *DuPont* bulletin cannot be deemed to render the subject matter of applicants' Claims 10 to 17 and 19 to 23 obvious under Section 103. It is therefore respectfully requested that the rejection be withdrawn. Favorable action is solicited.

The Examiner reiterated the rejection of Claims 10 to 17 and 19 to 23 under 35 U.S.C. §101 as being drawn to the same invention as claimed in Claims 1 to 9 of *Bratz et al.* (US 6,482,772) pointing out that the rejection would be maintained until the disclaimer which applicants filed in February 2004 has been processed and approved by the Certificate of Corrections branch.

It is respectfully noted that applicants and their representative are unable to understand the undue delay on the part of the respective branch of the U.S. PTO considering that receipt of applicants' disclaimer was confirmed by the U.S. PTO by date-stamped postcard, and by clearing the check covering the requisite disclaimer fee which had been enclosed with applicants' disclaimer. It is also not understood why the respective branch of the U.S. PTO has not been able to resolve the issue in spite of applicants' repeated inquiries. Accordingly, it is respectfully requested that the respective rejection be held in abeyance.

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57) Cf. Example Nos C1, C2, C3, 1-6, 8, 11 to 13 and 18 in applicants' Table 3.